world. From 1829 to and including the first year of the present century Pennsylvania contributed over 50 per cent. of the total coal production of the United States and still produces between 45 and 50 per cent. of the total. The industry, particularly in the bituminous districts, has kept pace with the manufacturing industries and has increased in considerably larger ratio than the population of the state and of the United States as a whole.

Anthracite mining began in Pennsylvania in 1814, when 20 long tons were produced for local consumption. The year 1820 is, however, usually considered to mark the beginning of the anthracite industry, as in that year 365 long tons were shipped from the anthracite region. From 1814 to the close of 1910 the total production of anthracite had amounted to 1,946,717,383 long tons, or 2,180,323,469 short tons.

The first records of bituminous-coal production in Pennsylvania are for the year 1840, when 464,826 short tons were mined. The total output of bituminous coal from 1840 to the close of 1910 has amounted to 2,251,737,097 short tons, from which it appears that the total production of anthracite and of bituminous coal in Pennsylvania has been nearly equal. At the close of 1908 the total production of anthracite from the earliest times to the close of that year had exceeded the total bituminous production by approximately 51,000,000 tons. As, however, the production of bituminous coal in 1909 and 1910 exceeded that of anthracite by more than 122,000,000 short tons, the total production of bituminous coal now exceeds that of anthracite.

THE MEMORIAL TO ANTON DOHRN

At a meeting of the International Zoological Congress held at Graz in August, 1910, a plan was initiated to establish a memorial to the late Professor Dohrn, the founder and director of the Zoological Station at Naples. It may be doubted whether any other single institution has equaled this one in its contributions to the progress of biology in the past thirty years. To its development Dohrn devoted the whole energy of a singularly forceful and many-sided personality, laboring incessantly to keep the station fully abreast of modern progress, to enlarge its scope and to improve its equipment and methods, until it stood among the foremost of biological laboratories. It long since became a gathering place for investigators from many countries, and the influence that these men carried with them to their own institutions of learning made the Naples Zoological Station a potent force in the progress of biological science throughout the world.

Dohrn's far-reaching influence upon biology was due as much to his rare personal qualities as to his scientific work. He took a keen interest in the work of other investigators, even in fields far removed from his own, and was always ready with encouragement, particularly to younger men. Those who had the good fortune to come under his kindly and stimulating influence will not forget the debt they owe him. Beyond all this, the versatility of his human interests and his genius for friendship made him the center of an ever-widening circle that knew no limits of occupation or of nationality, and he was a force in the life of his time that is not to be measured by technical achievement alone but by a higher standard.

At the Zoological Congress it was proposed to establish a memorial of Dohrn's life and work, to include (1) a bronze portrait relief, to be erected in the laboratory at Naples, and (2) an endowment fund to aid in carrying on the steadily expanding work of the station. It is fortunate for the first of these aims that Dohrn had given sittings shortly before his death to the eminent sculptor Hildebrand, of Munich, who has executed a beautiful work of art that is well worthy of the present purpose. The need of additional funds for the station, as a result of the constant expansion of its work, was a subject of much concern to Dohrn in the latter part of his life. Those who knew him best feel sure that no form of memorial, could he have foreseen it, would have been

more welcome to him than the establishment of a permanent fund for this purpose.

The present movement was begun by the formation of a central committee, under the chairmanship of Professor von Graff, the president of the congress, with Professor Boveri as general secretary. This committee designated a number of persons to organize the work in various countries; and to this end national subcommittees have now been formed and are at work in most of the European countries. The American subcommittee includes about thirty biologists, and in addition a considerable number of others whose immediate interests do not lie in the field of scientific study. The hospitality and consideration which so many American students and investigators owe to Professor Dohrn, and the important influence exerted by the station on the progress of American science, justify the hope that this country will make generous response to an appeal for funds. The American subcommittee has formed an executive committee with the following membership:

Charles R. Crane, Chicago, Ill., president of the board of trustees of the Marine Biological Laboratory at Woods Hole.

Charles B. Davenport, director of the Carnegie Station for Experimental Evolution, Cold Spring Harbor, L. I., N. Y.

Frank R. Lillie, University of Chicago, director of the Marine Biological Laboratory, Woods Hole.

Jacques Loeb, Rockefeller Institute, New York, N. Y.

Hon. Seth Low, New York City.

Alfred G. Mayer, director of the Carnegie Marine Laboratory, Tortugas, Fla.

Henry F. Osborn, president of the American Museum of Natural History, New York City.

Stuart Paton, Princeton University.

George H. Parker, Harvard University.

William E. Ritter, director of the San Diego Marine Laboratory, La Jolla, Cal.

Isaac N. Seligman (treasurer), New York City.

Charles D. Walcott, secretary of the Smithsonian Institution, Washington, D. C.

Paul M. Warburg, New York City.

Edmund B. Wilson (chairman), Columbia University, New York, N. Y.

Mr. Seligman has kindly consented to serve as treasurer for the American subcommittee. Subscriptions of any amount, however small, will be welcomed. Checks should be drawn to the order of the Anton Dohrn Memorial and sent to Mr. Isaac N. Seligman, treasurer, care of J. and W. Seligman & Co., No. 1 William St., New York, N. Y.

EDMUND B. WILSON,
Chairman of the American Subcommittee
COLUMBIA UNIVERSITY,
NEW YORK, N. Y.

SCIENTIFIC NOTES AND NEWS

MR. WALDEMAR LINDGREN, who has been connected with the U. S. Geological Survey since 1884 and since 1907 has been in charge of the investigations of metalliferous deposits and of metal statistics, has been elected chief geologist in succession to Dr. C. Willard Hayes.

IT is reported that the Nobel prize for medicine will be awarded this year to Professor Allvar Gullstrand, of the Upsala University, for his work on the dioptrics of the eye.

DR. CHARLES R. VAN HISE, president of the University of Wisconsin and formerly professor of zoology, has been elected a fellow of the American Academy of Arts and Sciences, of Boston.

DR. SIMON FLEXNER has received from the German government an appointment as honorary member of the Institute for Experimental Therapy at Frankfort-on-the-Main.

THE doctorate of science has been conferred by the University of Bristol on Mr. A. P. Chattock, sometime professor of physics in the university; Professor Julius Wertheimer, B.Sc., principal of the Merchant Venturers' College and dean of the faculty of engineering in the university, and Professor Sir William Ramsay, F.R.S., sometime principal of University College, Bristol.

MR. ELI S. HAYNES, who has been in charge of the Laws Observatory at the University of Missouri, has been appointed a university fellow in astronomy at the University of California.